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REMARKS

Status of the Claims

Claims 1-28 are pending in this application. No claims have been canceled or added. Claim 1 has been amended to delete R¹ and insert R' to correct an obvious typographical error. Claim 1 has also been amended to define the claimed complex as soluble. Claim 10 has been amended to describe the magnesium compound (a) as in solution. Support for these amendments is found for example in the title of the invention on page 1 of the specification and the examples. No new matter has been added by the above claim amendments.

Claim Objection

The Examiner objects to claim 1 for the definition of R'. Applicants amend claim 1 to define R' and delete "R¹". As such, this objection should be withdrawn.

Rejection under 35 USC 102(b)

The Examiner maintains the rejection of claims 1, 2 and 4-6 as anticipated by Miya et al. USP 5,100,849 (Miya '849). The Examiner states that the arguments imply that the novel aspect of the complex is in the method of producing the complex by treating a MgCl₂·nROH complex with R''₂Mg and Ph(COCl)₂ or alternatively, with

only $\text{Ph}(\text{COCl})_2$, or by treating $\text{Mg}(\text{OR}'')_2$ with $\text{Ph}(\text{COCl})_2$. Applicants respectfully disagree; thus, Applicants traverse the rejection and respectfully request the withdrawal thereof.

Applicants submit that the product claims are not directed to a composition, but specifically to a soluble complex, i.e. a distinct homogeneous chemical compound, with molecular units having the formula $\text{MgX}_2 \cdot [\text{R}(\text{OR}')_n]_m$. See amended Claim 1. Thus, the complex claims are unambiguous and do not imply product-by-process claims.

Applicants suspect that the Examiner does not comprehend that the complex of the present invention is a homogeneous chemical compound because Ziegler-Natta products, until now, were only known as heterogeneous $\text{R}(\text{OR}')_n$ covered MgX_2 particles. Those particles are not homogeneous chemical compounds and can only be characterized by their process of preparation. However, with the present invention, the complex is a homogeneous chemical compound that can be characterized individually without being defined by a process as recited in the present claim 1.

Applicants submit that the present invention is directed to a soluble magnesium halide - electron donor complex, the molecular elements of which consist of 0.5 to 2.0 electron donor molecules per one magnesium halide molecule. See page 1, lines 8-11 of the present specification, which states that the complex

is a chemical compound; thus the chemical compound is similar everywhere, i.e. homogeneous.

On the other hand, Miya '849 discloses "a spherical solid catalyst component having a large particle diameter is obtained without breakage of the shape of the particles formed at the time of spraying even when the particles are treated with titanium halide." Emphasis added. See column 5, lines 56-61 of Miya '849. The titanium treatment also includes treatment with an electron donor. See column 2, lines 16-18 of Miya '849. From this disclosure, Applicants submit that Miya '849 consists of heterogenous particles, unlike the present invention, which is a homogeneous chemical compound.

Moreover, Miya '849 discloses a large solid MgX_2 alcoholate core covered only on its surface by titanium halide and electron donor molecules. As a result, the product disclosed in Miya '849 has a huge molar excess of MgX_2 compared to the electron donor. However, in the present invention, the claimed complex has the claimed electron donor to magnesium halide molar ratio of about 0.5 to 2.0.

As such, Applicants submit that the homogeneous complex of the present invention is different from, and thus novel over Miya '849. Inasmuch as all the elements of the present

invention are not disclosed by Miya '849, Applicants request that the rejection be withdrawn.

Furthermore, Applicants submit that the Examiner's reliance on cited cases on page 3 of the Office Action is inapplicable. As explained above, the present invention is not directed to a product-by-process. The case law cited by the Examiner applies only when comparing product-by-process claims with prior art products or processes. The claims of the present invention are all genuine compound claims and thus not applicable to the cited case law.

Rejection under 35 USC 103(a)

The Examiner rejects claims 10-14, 16-19, 21, 22, 24-26 and 28 as obvious over Miya '849. The Examiner states that it would have been obvious to modify the reaction system of Miya '849 to use $\text{Ph}(\text{COCl})_2$ as the chlorinating agent to arrive at the present invention. Applicants respectfully disagree; thus, Applicants traverse the rejection and respectfully request the withdrawal thereof.

Miya '849 discloses the reaction of MgCl_2 with an alcohol to form a carrier and then the carrier is reacted with TiCl_4 and an electron donor. Miya '849 fails to disclose or suggest replacing the TiCl_4 with a chlorinating agent, such as $\text{Ph}(\text{COCl})_2$.

The Examiner also stated on page 4 of the Office Action that in the claimed process, only one equivalent of TiCl_4 would be needed instead of two equivalents as in the process of Miya '849. Applicants respectfully disagree.

No Prima Facie Obviousness

Applicants submit that the Examiner has failed to establish a prima facie case of obviousness pursuant to MPEP 2143 and MPEP 2143.01 and In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). The Examiner has failed to show that one of ordinary skill in the art would be motivated by some disclosure in the cited reference or in the general body of knowledge in the art to modify Miya '849 to arrive at the present invention.

Contrary to the Examiner's finding, Applicants submit that Miya '849 fails to disclose or suggest that TiCl_4 may act as a chlorinating agent, or that it can replaced a chlorinating agent. Specifically, Miya '849 fails to disclose or suggest that $\text{Ph}(\text{COCl})_2$ may replace TiCl_4 . The Examiner fails to set forth some other source for making the naked assumption that $\text{Ph}(\text{COCl})_2$ may replace TiCl_4 in the invention in Miya '849. The Examiner merely states an assumption. However, "the Examiner's assumptions do not constitute the disclosure of the prior art". In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955, 1956-57 (Fed. Cir. 1993), which states that "[W]hen the PTO asserts that there is

an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears."

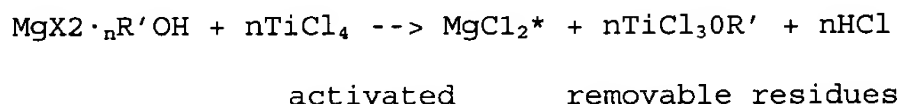
Moreover, the Examiner's statement that replacement of TiCl_4 with $\text{Ph}(\text{COCl})_2$ is an obvious modification because formation of the donor of formula (I) was to be expected is unfounded since Miya '849 fails to suggest such an in situ formation of a donor and especially not the formation of a donor from a halogenous precursor such as $\text{Ph}(\text{COCl})_2$. Applicants submit that the Examiner is engaging in impermissible hindsight to reconstruct the present invention.

The Examiner's statement that one would expect formation of the donor of formula (I) assumes that one of ordinary skill in the art would be using Applicants' disclosure as a guide. It is improper for the Examiner to use Applicant's own teachings to form the obviousness rejection. Such hindsight reconstruction is impermissible according to MPEP 2141 and In re Deminski, 796 F.2d 436, 443 230 USPQ 313, 316 (Fed. Cir. 1986) and W.L. Gore & Assoc. v. Garlock, Inc. 721 F.2d 1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983).

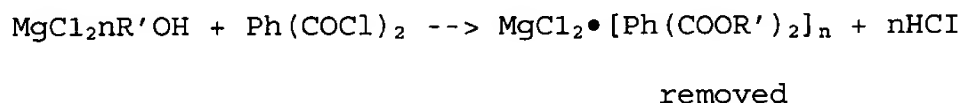
Furthermore, the claimed halide electron donor precursor, exemplified by $\text{Ph}(\text{COCl})_2$, is not disclosed in Miya '849. The feature that the $\text{MgX}_2 \cdot n\text{R}'\text{OH}$ must stay in solution in subsequent reactions (see amended Claim 10) is also not disclosed in Miya

'849. On the other hand, Miya '849 discloses solidification into particles before the reaction.

Applicants submit that even if Miya '849 disclosed all that the Examiner insists, the Examiner still has an incorrect understanding of TiCl_4 and $\text{Ph}(\text{COCl})_2$ as being functionally equivalents. In the process of Miya '849 the R'O of the alcohol is removed by TiCl_4 according to the following reaction:



However, in the claimed process, the following R'O preserving reaction occurs:



In other words, the TiCl_4 of Miya '849 removes the alkoxy from the MgCl_2 , whereas the claimed $\text{Ph}(\text{COCl})_2$ preserves the alkoxy with the MgCl_2 . The compounds have essentially opposite functions and are not equivalent, as suggested by the Examiner.

As such, Applicants submit that the obviousness rejection should be withdrawn as no prima facie case of obviousness has been

established since Miya '849 fails to disclose or suggest all the elements of the present invention.

Obviousness-Type Double Patenting Rejection

The Examiner rejects claims 1-28 under the doctrine of obviousness type double patenting over claims 1-50 of U.S. Patent 6,200,923. The Examiner states that the '923 patent discloses a catalyst and a process for making the same, wherein the catalyst contains a magnesium halide in the form of an alcohol complex $[MgCl_2 \cdot (ROH)_m]$, an electron donor in the form of a phthalate $[Ph(COOR)_2]$ and a titanium compound in the form of $TiCl_4$.

Applicants submit that the '923 patent relates to a soluble composition containing Mg, Ti, halogen and a carboxylic acid ester having the formula (I) below (see column 2) and having catalytic polymerization activity (see column 5, lines 46-47).

Formula (I)



According to the '923 patent, this composition is prepared by contacting (1) $MgX_2 \cdot cROH$ complex, (2) TiX_4 and (3) carboxylic acid ester and reacting them at a certain temperature, preferably in the presence of aromatic hydrocarbon (column 4,

lines 49-51), whereby a composition in liquid form is formed (see column 3, lines 38-45), which is then precipitated, if desired (see column 5, lines 8-10). The '923 patent does not claim any formation of soluble Mg dihalide - donor complex as a preliminary step prior to the titanisation step. To the contrary, in the '923 patent, $MgX^1_2 \cdot CR'OH$ is reacted with TiX_4 first, and only thereafter is the donor added (see column 4, lines 54-62). This chemical process is totally different from the process in the present invention. Compare the reaction equations.

In the '923 patent and according to the prior art teachings, TiX_4 is used to form a soluble composition, which composition has catalytic activity. To the contrary, the present invention describes a complex and a process for preparing a complex, which is soluble without any TiX_4 addition. This complex solution is then added to $TiCl_4$ to form a catalyst. The present invention yields unexpected superior results over the '923 patent, in the complex as well as in the process. In the present invention, a homogeneous starting material for further use in catalyst preparation is obtained, huge amounts of waste $TiCl_4$ and undesired side products can be avoided. Preparation as a whole is much easier.

As such, Applicants submit that the present invention is patentable over the '923 patent and this rejection should be withdrawn.

Conclusion

As Applicants have addressed and overcome all rejections in the Office Action, Applicants respectfully request that the rejections be withdrawn and that the claims be allowed.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Kecia Reynolds (Reg. No. 47,021) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a one (1) month extension of time for filing a reply in connection with the present application, and the required fee of \$110.00 is attached hereto.

Appl. No. 09/582,321


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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By 

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